Concerning the Nature of Perception
Author(s): Hadley Cantril
Source: *Proceedings of the American Philosophical Society*, Vol. 104, No. 5 (Oct. 17, 1960), pp. 467-473
Published by: American Philosophical Society
Stable URL: http://www.jstor.org/stable/985231
Accessed: 18-11-2015 12:49 UTC

REFERENCES
Linked references are available on JSTOR for this article:
http://www.jstor.org/stable/985231?seq=1&cid=pdf-reference#references_tab_contents

You may need to log in to JSTOR to access the linked references.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

American Philosophical Society is collaborating with JSTOR to digitize, preserve and extend access to *Proceedings of the American Philosophical Society*.

http://www.jstor.org

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

CONCERNING THE NATURE OF PERCEPTION*

HADLEY CANTRIL

Chairman and Senior Counsellor, Institute for International Social Research, Princeton

(*Read April 21, 1960*)

In one of the Socratic dialogues Benjamin Franklin wrote in 1730 he pointed out that "As the happiness or real good of man consists in right action, and right action cannot be produced without right opinion, it behoves us, above all things in this world, to take care that our opinions of things be according to the nature of things." [1] In a sense, Franklin posed the central question psychologists have been dealing with in their studies of perception over the years: how do we acquire perceptions that correspond faithfully enough to what is perceived to enable us to act effectively as we carry out our various purposes?

As we try to understand the process of perception which is involved in one way or another in all human experience, it may be helpful if we differentiate at least four different varieties of human experience in order to be quite clear at the outset of the wide gap between naive experience and the conceptual abstractions we create to account for that experience.

EXPERIENCE AS REFLECTED IN ON-GOING, NAIVE EXPERIENCE

This is the level of immediate, "pure" experience as experience—unanalyzed, unconceptualized, unmediated, almost ineffable, and with no concern on the part of the experiencing individual to describe, analyze, conceptualize, or communicate what is going on in his mind. This on-going, naive experience is what Korzybski called "first order" or "un-speakable" experience.

As has frequently been pointed out, any attempt to describe or analyze experience immediately alters that experience. When we are trying to describe or analyze mind or any aspect of it, we are functionally organized quite differently from when we are participating in the process of living and not describing or analyzing it.

EXPERIENCE AS DESCRIBED

Verbalization and communication, either retrospectively or simultaneously with the occurrence of some activity, may be distinguished methodologically from naive experience because of a special form of awareness required to select aspects of the variety of mental processes involved. Some focusing, categorization, and coding are operating in the process of dealing consciously or verbally with any selected phase of the mind's activity. It is as if with any such focusing, awareness is shifted from the full orchestration of the whole to the role of a particular instrument in the orchestra. The point was nicely stated by Aldous Huxley:

> What a gulf between *im*pression and *ex*pression! That's our ironic fate—to have Shakespearean feelings and (unless by some billion-to-one chance we happen to *be* Shakespeare) to talk about them like automobile salesmen or teen-agers or college professors. We practice alchemy in reverse—touch gold and it turns into lead; touch the pure lyrics of experience, and they turn into the verbal equivalents of tripe and hogwash.[2]

It is important for a psychologist using descriptive material of any kind never to lose sight of the fact that reports of mental activity are not to be equated with the mental activity itself. Yet such protocol data still provide the psychologist with some of his most valuable raw material while some of the most penetrating descriptions of experience have been given us by poets, novelists, composers and religious prophets.

EXPERIENCE AS ANALYZED AND CONCEPTUALIZED

Instead of focusing on a selected phenomenon "going on in our minds" as we must if we are trying to describe, we may in the midst of some occasion of living try to "figure out" analytically and conceptually what is going on. We of course do so for some purpose: perhaps we are trying to work through some personal problem, perhaps

* Some parts of this discussion are taken from a chapter, "A transactional inquiry concerning mind," prepared for a symposium edited by J. M. Scher and to be published under the title "Toward a Definition of Mind."

[1] Van Doren, Carl, *Benjamin Franklin,* 87, New York, Viking, 1938.

[2] Huxley, Aldous, *The genius and the goddess,* 47, New York, Harper, 1955.

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

we are delving into our mental processes in the hope of discovering hunches or clues that will provide us with some hypothesis. Whatever the reason, analysis of any occurrence is a very different operational state of affairs from on-going purposive behavior itself or from a focus on some aspect of it. It is perhaps what the poet Wordsworth had in mind when he said, "we murder to dissect."

EXPERIENCE AS ABSTRACTED FOR SPECIFICATION

Any attempt to understand experience is ultimately an attempt to distinguish components, to choose those by means of which we may be able to interpret the significance of any functional aspect of behavior, and to describe the variables on which the singularity of any experiences depend. If the abstracting we make can be effectively related to our presuppositions, then we shall have an instrument to render communication more accurate and to enable others to understand the abstractions without reference to any particular item of behavior that might illustrate it.

Such abstractions are not affected by individual behavior and are not altered when conceptualized from the point of view of different persons. If they were so affected or altered, they would prove useless; it is their static quality that gives them the utility they have in understanding the significance of concrete behavioral situations. This does not mean, of course, that such abstractions never change. They are, on the one hand, constantly evolving and being modified by scientists and philosophers themselves to increase their usefulness. Any creative individual must test his abstractions by their performance and not by their consistency, realizing that any abstraction is highly tentative. All that we mean by the "static quality" of an abstraction is that an abstraction would be operationally useless if its significance were not somehow "fixed."

It should be emphasized again that when we are dealing with this fourth level of complexity which makes scientific and philosophical communication possible, we are necessarily violating phenomenal data. A full awareness of this fact and of some of the omissions involved in operating in this area may give us some perspective to increase the usefulness of our abstractions.

Much as we might like to do so, we can never somehow isolate experience or reduce it to a "pure" state for investigation. It strikes us as nonsensical even to think of such a thing for the simple reason that the processes of mentation can only be studied as part of the situation in which they operate and except for which they would not be what they are. There seems to be an increasing agreement among psychologists that perceiving can no longer be thought of in any sense as "mind reacting to" or being "acted on." Mounting evidence from a wide variety of experiments, demonstrations, and field investigations supports the view that mind may be appropriately described as a "transactional" process. The concept "transaction" was used over a decade ago by Dewey and Bentley to differentiate the processes involved in "knowing" from views based on interaction or self-action which have affected so much of psychological theory. While the word "transaction" is hardly inclusive and dynamic enough to encompass the novel and creative aspects that emerge in so many "transactions" of living, it serves as a useful concept in helping us avoid misleading bifurcations that all too easily inject themselves not only into everyday common sense accounting but into psychological explanation. Such a term keeps us more aware that there can be no "knowing" without "doing," just as there can be no "person" except for an "environment," nothing "personal" except for what is "social."

An essential feature of experience is the external orientation, the "objectivization," of some aspects of experience. We attribute parts of our own experience to events external to ourselves and in whose independent existence we firmly believe. We experience the things we see and hear and taste and touch as existing apart from our minds, outside of ourselves, and as possessing in themselves the characteristics we find in them.

The view that something in some sense goes "into" the organism has persisted from the time of the Greeks who spoke of the objects emitting small replicas of themselves which were received by the perceiver, right up to much present-day psychology, with its interest in "stimulus determination" of perception. This belief is strong in all of us and it *must* be strong if we are to be able to act at all effectively. But the great danger of such a belief when inquiring into the nature of mind is because it gives us the answer to our problem in advance of our inquiry. For if the objects of perception exist in their own right as perceived, then all we have to do is to fit the perception to an already existing object. The error of this naive view is nicely expressed by Whitehead, whose comment referring to the

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

physical sciences applies even more forcibly to the world as perceived: "We must not slip into the fallacy of assuming that we are comparing a given world with given perceptions of it. The physical world is in some sense of the term, a deduced concept." [3]

More recently the same point has been made by two other distinguished British scientist-philosophers. J. V. Young, the biologist, writes: "The form we give to this world is a construct of our brains, using such observations as they have been able to make. Only in that sense does it exist." [4] And Sir Russell Brain, the neurologist, says: "The scientific account of perception, however, teaches us that the objects which we perceive outside our brains are not as independent of us as they appear to be: they have qualities which are generated by our brains and which have no other existence." [5]

When we perceive, we externalize certain aspects of our experience and thereby create for ourselves our own world of things and people, of sights and sounds, of tastes and touches. "The act of perceiving itself so implies the act of considering-it-real that the latter can be called an attribute of the act of perceiving." [6] The problem then, as rephrased, is the problem of what is done *by* the organism. To say that we externalize certain aspects of experience is by no means to answer this question but merely to point out one characteristic of the process. Bridgman writes that

> in seeking the precision demanded by scientific use we have thus been led to discard the common sense method of handling our environment in terms of objects with properties, and have substituted for it a point of view that regards a reduction to activities or operations as a safer and better method of analysis. . . . What we are in effect doing in thus preferring the operational attack is to say what we *do* in meeting new physical situations has a greater stability than the situations themselves and that we can go further without revising our operations than we can without revising our picture of the properties of objects. Or, expressed somewhat differently, our methods of handling the external world have greater stability than the external world itself.[7]

Without taking any metaphysical position regarding the existence of a real world, independent of experience, we can nevertheless assert that the world—as experienced—has no meaning and cannot be defined independent of the experience. The world *as we experience it* is the product of perception, not the cause of it. The study of perception just as the study of mind must take the active perceiving individual as its proper point of departure.

LEARNING SIGNIFICANCES

The business of making sense out of what goes on around us involves the fashioning of an environment for ourselves within which we can carry out the process of living. A "happening" thus becomes an "event" for us only when *we* assign it some importance or consequence. And the meanings taken on by the impingements constantly bombarding us through our sense organs have significance and the particular significance they do because of the potential purposive behavior they serve. "Naked sense impressions simply do not occur, and the traditional analysis of our conscious experience into naked sensations as building blocks is palpably bad description." [8]

Just what the significance of any impingement will become, if any significance is attached at all, depends on the way we learn to utilize it in the course of our experience from infancy onward. It is only through experience that the "environment" or the "thereness" around us becomes differentiated into parts as we learn some of the potential significances of the infinite variety of aspects the environment around us has for us. G. H. Lewes observed in 1879 that "the new object presented to sense, or the new idea present to thought, must also be *soluble in old experiences,* be recognized as like these, otherwise it will be unperceived, uncomprehended."

A major function of perceiving, then, is to process and sort the consequences of its own activity and its own participation so that patterns of interpretations or assumptions are created and organized to serve as reliable guides for action, bringing the satisfactions an individual seeks.

These assumptions begin to bring some order into disorder by enabling us to predict what will happen in a given situation if we act in a particular way or possibly if we do not act at all. In this process we are trying to improve both the range

[3] Whitehead, A. N., *The aims of education,* 166, New York, Mentor Books, 1949.

[4] Young, J. Z., *Doubt and certainty in science,* 107, London, Oxford Press, 1951.

[5] Brain, W. Russell, *The nature of experience,* 35, London, Oxford Press, 1959.

[6] Shilder, Paul, *Medical psychology* (translated by David Rapaport), 40, New York, International Universities Press, 1953.

[7] Bridgman, P. W., The operational aspect of meaning, *Synthese* **8**: 255–257, 1950–1951.

[8] Bridgman, P. W., The task before us, *Proc. Amer. Acad. Arts and Sciences* **83**: 98, 1954.

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

and the degree of *correspondence* between the meanings and significances we *attribute* to situations and the meanings and significances these situations *turn out to have* for us as we experience the consequences of our action in striving to accomplish our particular purposes. Our actions, of course, will be effective only in so far as the predictions derived from our perceptions correspond to what we actually experience when we do act.

It should be emphasized that the degree of correspondence is inevitably to be judged from the point of view of the participant, from his own unique behavioral center in any occasion of living, and not from the point of view of an outside observer. The word "center" is used here in the dictionary sense of "the point toward which any force, or influence takes it origin; as a storm center." A major contribution a psychologist can make to an understanding of mind is to increase his knowledge of the process by means of which the degree of correspondence between the significances which we *externalize* and those which we *encounter* is achieved. We should perhaps note in passing that the word "correspondence" is not used here in the sense of identity between experience and some outside "reality" but as correspondence between two kinds of experience. Once some aspect of the environment acquires a potential significance of a high order of reliability, then a person can and does think of it as existing apart from himself just as he can and does think of the purposes and values of other people as existing apart from himself. According to our view, all aspects of the environment, whether they are physical or social, exist for us only in so far as they are related to our purposes. If you leave out human significance, you leave out all constancy, all repeatability, all form.

VARIETIES OF SIGNIFICANCES LEARNED

As we try to accommodate our needs and resolve our urges, we learn through our experience what significances are related to each other and to characteristics of the situation of which we are a part. As experience accumulates, we learn which relationships have high probabilities of occurrence and which only low probabilities of repeating themselves. The mind weights these probabilities in terms of their relevance to the purposes of the experiencing individual as these are involved in the unique situation encountered. Just how a person experiences new occasions will, then, in the long run be determined by the assumptive complex he brings to that occasion.

The process of acquiring assumptions to increase the effectiveness of behavior is guided and channelled by cultural norms. Our perceptions, as we externalize them, are fashioned much more than most of us ever realize by the diverse forms of our particular cultural and subcultural groups. We might almost define culture as the common pattern of learned significances. Modern cultural anthropologists describe experience as "something man projects upon the outside world as he gains it in his culturally determined form."

Our own awareness of what goes on in our minds as our assumptions are triggered into operation by the relevance a situation potentially has to our purposes, may be a very limited awareness. At other times, awareness may be both extensive and profound. There are obviously great variations according to the nature of the situation, just as there are great variations within and between individuals. But regardless of how restricted or how wide-ranging awareness may be, what we are aware of in our minds comes about through a process in which we take account of many more and many different aspects than we are probably aware of. All complex relationships between externality and impingement, between impingement and excitation, and between excitation and assumption, are taken account of in the perceptual process in so far as they are available to us through experience or physiology.

It may be useful to differentiate at least some of the varieties of assumptions if for no other reason than to show the intricacy of what apparently constitutes perception as it makes its transition from one situation to another. By comparison, the operations of the most modern electronic computer seem very simple indeed.

1. *Assumptions concerning the significance of objects.* The objects in the world around us have the meaning they do for us because we attribute to them certain characteristics, sizes, shapes, or properties. We have built up these significances in the course of our dealings with these objects. For example, even though the pattern a piece of writing paper forms on our retina may not be rectangular as we look at it on our desk, we assume that the sheet of paper *is* rectangular; even though the top of a drinking glass may be seen as elliptical when we stop to "look at" it, we still "know" that it is circular. Even though we see only the head of a horse projecting from behind

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

the barn, we will report that we are seeing a horse because we have learned to take for granted that the rest of the horse is there. We assume that things are "wholes." We learn to regard objects as "large" or "small," as "far" or "near," as moving "fast" or "slowly" because of the experiences we have become used to relative to these objects. All of this may be seen most dramatically when we read reports of individuals who have been blind from birth but who in certain rather rare instances can gain their sight after surgery. In summarizing some of these reports, J. Z. Young writes:

> The patient on opening his eyes for the first time gets little or no enjoyment; indeed, he finds the experience painful. He reports only a spinning mass of lights and colours. He proves to be quite unable to pick out objects by sight, to recognize what they are, to name them. He has no conception of a space with objects in it, although he knows all about objects and their names by touch.

2. *Assumptions concerning the significance of people.* When a situation in which we are participating or intend to participate involves other people, the assumptions by means of which our action is guided include new and different aspects. For other people have their own purposes which it is up to us to guess and to understand. In the process we must realize that the purposes of other people are just as "real" as any of the physical characteristics of objects. We must predict upon the basis of our assumptions what effect our intended behavior will have on others' purposes, how others will see us, and how their reaction to us in turn will affect our own subsequent action in the endless chain of events in which we are involved. We attribute certain significances to certain individuals because of assumptions we have learned concerning the meaning of the roles they play, their vocations, their place in the status hierarchy, the neighborhood, the nation, the race they represent. All of these personal attributes are often thought of as "fixed" characteristics of people according to the particular purpose any such grouping may serve us. The gestures of a people, their manners, their customs, the way in which they regard and utilize time and space are often cues which are either not understood or misunderstood until a person from another culture learns the standards upon which significance is based.

3. *Assumptions concerning the significance of sequential happenings.* Obviously the world of objects and people does not remain passive and static. Things keep changing. There is a ceaseless flow of happenings around us. Day follows night; our life follows certain rhythms; our hunger stops when we eat; the motor of our automobile comes to life when we turn on the starter; the traffic policeman stops us if we disobey his signal. In the course of living, a whole host of sequential significances are built up in us as we carry on in a world that is in continual flux.

In order to make more certain that we can "count" on a particular event to follow another event, man has devised a whole host of artifacts with built-in specifications. Many of the tools, instruments, machines, buildings, power systems, communications devices, and bewildering variety of man-made equipment that characterize modern life have been devised to ensure that certain events or satisfactions will follow each other in directions that are predictable and reliable. Often this standardization is at considerable cost to the richness of experience if one looks at other aspects than efficiency. For example, symbolism with all the aesthetic, intellectual, and spiritual overtones it provides is almost entirely ruled out as man's artifacts become more streamlined and functional. When we look at the combinations of our assumptions concerning people and our assumptions concerning sequential significance, we begin to get some insight into the complexities of understanding each other in a social world which, like the physical world, is constantly changing. For example, the quality of the relationship we have with other people depends in part on our capacity to comprehend simultaneously the sequential significances other people are experiencing in a chain of events, together with the sequential significances we ourselves are experiencing in the same phase of this chain of events. The experiences each of us has in the same phase of the sequence of events may either show how closely we are linked together or how different and far apart we are. For we are able to share the same experience of what is significant in our participation with other people only in so far as we and they experience the same significances simultaneously in a chain of events in which we are all involved. Anyone who has watched an American football game with a foreigner who is seeing the game for the first time has sensed the disparity. Unless the significance of sequential events can be shared by people, then the event as the same "event" simply does not exist. Our allegiances and loyalties to others

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

come about because of the way in which we have learned to share these sequential events and have experienced a particular quality of value satisfaction from joint participation in what we are therefore able to call the "same event."

4. *Assumptions concerning the significance of actions.* Each of us eventually learns, sometimes gradually, sometimes suddenly, what the probable significance of certain of our actions will be. We learn what experience we are likely to have if we initiate a certain chain of behavior. The child learns that a rubber ball will bounce if he throws it on the floor, that the cat will scratch him if he pulls its tail, that he has a better chance of getting the cooperation he desires if he says the right thing in the right way at the right time to his parents or friends. Each individual, according to his purposes, learns through the repeated testing of his own action to become more effective in bringing about the consequences he wants. The rituals, customs, ceremonies, and laws of a culture all ensure a greater repeatability in social affairs by providing more predictable directions, enabling more people to chart their courses of action, and thereby obtain greater satisfaction for each participant.

5. *Assumptions concerning temporal significances.* Permeating the learning of all varieties of assumptions is its temporal aspect. This is such an integral part of all the processes of mind that we are seldom aware of the variety of assumptions concerning time that we are taking into account. Social psychologists and cultural anthropologists have often pointed out the different meanings and significances of time-measures, the different values placed on units of time, and the effects of technology on the time standards of different groups and their operational definition of "promptness," etc. But the assumptions we build up concerning subjective time become much more complex and subtle when considered from the first person view. For example, the subjective "present," as so often pointed out, is likely to be a span of time more or less unique to every individual and gauged by him in the context of his own life, his age, his circumstances, etc. Similarly, with the "past" and the "future."

The subjective time a person may associate with the realization of some value will vary by the "level" or "universality" of the value symbol serving as a standard for personal experience, for example, the differing standards of a Hindu mystic and an American business man. Different purposes will be implicitly embedded in different temporal dimensions as will assumptions concerning different sequential events and the use and manipulation of different objects. The "timing" of political action by Soviet leaders in terms of their long-range purposes will likely have a quite different base line from the timing of political action by Western leaders who tend, for example, to give weight to such a factor as the next forthcoming election.

Most of the time for most of us, a variety of these temporal significances are being taken into account simultaneously, being given different priorities in awareness as the pattern of purposes propels the stream of behavior through what we conceptualize as periodic time.

6. *Assumptions concerning the significance of value standards.* In almost any concrete situation in which we participate, we are faced with alternative choices of action. Whether we are aware of the process or not, we weigh alternative courses of action in terms of the value-significances they are likely to have for us, the relative value-satisfactions we shall obtain if we do this or that, or if we do nothing at all. Evaluation among various alternatives is made on the basis of the relative probability that each possible course of action will lead to the desired consequences, will produce the desired results. The process of guessing at the possible value-satisfaction our behavior will bring is enormously complicated since an almost infinite number of subprobabilities relating to each of the above classes of significances must be taken into account. The process involves feelings or overtones that we sometimes sense only vaguely, that are often not bounded by space or time, and that only become real and meaningful as they operate in determining what we will do in the here and now. In this process we may consciously or unconsciously refer to certain abstractions that are embodied in some code of ethics, some political ideology, some religion, and which we have learned to accept as possible guides that we may put to use as possible tests on appropriate occasions. While not real in their own right, these abstractions can become real for us if they operate effectively in concrete situations. And in this context, they are often indispensable "realities."

This is only a brief list of some of the significances, of some of the varieties of assumptions, constituting part of the active storage facilities the mind apparently provides. Assumptions move in and out in various complicated combinations in

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions

fractions of a second. Some of the assumptions endure for a lifetime, others are fleeting. Our differentiation of assumptions into various headings is, of course, quite arbitrary. There is no clear-cut line dividing them. Furthermore, we must emphasize again that these assumptions are by and large interdependent in terms of their operation in a specific occasion of living.

CONSTANCIES

The effectiveness of our behavior in terms of carrying out our purposes is dependent upon our ability to act so we can experience the consequences we want to and intend to. This requires some way of knowing what can be "counted on" in the environment to bring about the desired consequences when we do act. For obviously we should not get far in the human venture if we carried on our lives with the continuous and conscious realization that we were acting on the basis of probabilities by assigning significances to the hieroglyphic stimulus patterns around us. If this were the unhappy state of affairs, we should be forever stopping to figure out what objects were, what people were going to do next and what they were really up to, what validity there was anyway to the many abstractions customarily used to guide our own activity. We should be frustrated to the point of near paralysis.

When we do discover from experience what can be "counted on," we can say that our mind has built up "constancies" or, more accurately expressed, "continuities." We begin to attribute certain continued characteristics to an object, a person, a situation, a government, a nation, etc. These provide a sense of surety, the feeling that the same significances will repeat themselves, will prove reliable as we act to carry out our purposeful behavior. The mind transforms the probabilities of assumptions into the certainties of constancies. Every act is based on the assumption that probable events are relatively certain events.

In spite of the long and venerable history the subject of "constancy" has had in the history of experimental psychology, there has been comparatively little consideration of the *function* of constancy, of what constancy *does* for us. What constancy does is, essentially, to enable us to "size up" the relationship of our own unique position to some object, person, or situation so that we can make a prediction with a fair degree of certainty of what will be the most effective action for us to take at some particular point in time.

And so we create and maintain a whole variety of constancies that provide us the anchoring points for evaluation and the springboards for action. The constancies we attribute to objects in terms of their size, shape, distance from us, and various other "properties" are familiar to every reader of an elementary text in psychology. And we can well add to this list what we might call the "social constancies" we build up and maintain. Psychologically, their function is the same as the function of "object constancy." Here we can refer again to words and symbols with all the intricate relationships between naming and the named that have received so much attention from semanticists; we can refer again to the artifacts man creates in order to increase the range and predictability of his behavior; we can refer again to the mores, customs, loyalties, and laws of a society devised to give greater regularity to social life.

A most important by-product of the constancies we build up is our sense of the constancy of our own Self. It is only as we participate in the world around us that we discover our Selves. And our own self-significance and self-constancy become increasingly real for us as we participate in the physical and social environment around us and experience the consequences of bringing our assumptions and our constancies to bear on the concrete situations of living.

The mind of the creative individual is a mind that generates new standards: sometimes these are new standards for value inquiry, sometimes new aesthetic forms or models, sometimes new variables for scientific specification, sometimes new social or political organizations, sometimes the creation of new artifacts. The great leaps and developments that constitute so much of the story of man's history have generated in the minds of comparatively few representatives of the human species. Just what accounts for the creative imagination of these gifted individuals is as yet only dimly understood.

This content downloaded from 193.0.65.67 on Wed, 18 Nov 2015 12:49:27 UTC
All use subject to JSTOR Terms and Conditions